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AF/2828

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Applicants(s): Aquaro et al.
Case: 1-1-36-86
Serial No.: 09/516,274
Filing Date: February 29, 2000
Group: 2828
Examiner: T. N. Nguyen

I hereby certify that this paper is being deposited on this date with the U.S. Postal Service as first class mail addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Signature: _____ Date: April 21, 2004

Title: Method and Apparatus for Coupling a Multimode Laser to a Multimode Fiber

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REQUEST TO REINSTATE APPEAL

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Arlington, VA 22313-1450

Sir:

Applicants hereby request to reinstate the appeal. Applicants' Appeal Brief was submitted on October 22, 2003. A new Office Action was mailed on February 13, 2004.

The attention of the Examiner and the Appeal Board to this matter is appreciated.

Respectfully,

Kevin M. Mason

Date: April 21, 2004

Kevin M. Mason
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TRANSMITTAL OF SUPPLEMENTAL APPEAL BRIEF

Mail Stop Appeal Brief Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith are the following documents relating to the above-identified patent application:

(1) Request to Reinstate Appeal; and

(2) Supplemental Appeal Brief (original and two copies).

Please charge **Deposit Account No. 50-0762** to cover any fee. In the event of non-payment or improper payment of a required fee, the Commissioner is authorized to charge or to credit **Deposit Account No. 50-0762** as required to correct the error. A duplicate copy of this letter and two copies of the Supplemental Appeal Brief are enclosed.

Respectfully,

Kevin M. Mason

Date: April 21, 2004

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SUPPLEMENTAL APPEAL BRIEF

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Appellants hereby reply to the non-final Office Action, mailed February 13, 2004. A request to reinstate the appeal is submitted herewith. Appellants' Appeal Brief in an Appeal of the final rejection of claims 1 through 16 in the above-identified patent application was submitted on October 22, 2003.

REAL PARTY IN INTEREST

A statement identifying the real party in interest is contained in Appellants' Appeal Brief.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences that will directly affect or be directly affected by or have a bearing on the decision in the present appeal.

STATUS OF CLAIMS

Claims 1 through 16 are pending in the above-identified patent application. A statement identifying the original status of the claims is contained in Appellants' Appeal Brief. Claims 1-16 are now rejected under 35 U.S.C. §103(a) as being unpatentable over Payne (United States Patent No. 5,305,413) in view of Scifres et al. (United States Patent No. 4,818,062).

STATUS OF AMENDMENTS

A statement identifying the status of the amendments is contained in Appellants' Appeal Brief.

SUMMARY OF INVENTION

A Summary of the Invention is contained in Appellants' Appeal Brief.

ISSUES PRESENTED FOR REVIEW

A statement identifying the issues originally presented for review is contained in Appellants' Appeal Brief. In the present Office Action, the Examiner has withdrawn the previous rejections and added a new rejection of claims 1-16 under 35 U.S.C. §103(a) as being unpatentable over Payne in view of Scifres et al.

GROUPING OF CLAIMS

A statement identifying the grouping of the claims is contained in Appellants' Appeal Brief.

CLAIMS APPEALED

A copy of the appealed claims is contained in an Appendix of Appellants' Appeal Brief.

ARGUMENT

Independent Claims 1, 8, 15 and 16

Independent claims 1, 8, 15, and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Payne in view of Scifres et al. In particular, the Examiner asserts that Payne "shows in figures 1, 2, 8 a multimode tapered structure for coupling to fiber having an end elliptical cross section input and output end having a circular cross section."

Appellants note that Payne is directed to an optical fiber *feedthrough* in which a polarization maintaining fiber is sealed within a metallic sleeve by a glass seal, wherein the seal applies asymmetric stresses to to the fiber to reinforce the polarization maintaining properties. Payne teaches that

> a *feedthrough assembly* 2 comprises a metallic sleeve 4 through which is threaded a *polarization maintaining (PM) optical fibre* 6. The sleeve 4 has a tubular section 8, a frusto-conical section 10 providing a taper to a second tubular section 12 flattened at its end to produce an elliptical cross-sectioned section 14.

Col. 2, lines 40-46. Thus, a fiber is passed through a sleeve to apply asymmetric forces to the fibers. While the sleeve has an elliptical cross-sectioned section 14, it is not a multimode structure. In addition, *the fiber extends beyond the narrow end of section 14 (col. 2, lines 46-48). The fiber end has a circular shape.* The independent claims of the present invention, alternatively, are directed to a "multimode tapered structure" that couples a "multimode laser to a multimode fiber." As set forth in each of the independent claims, the *multimode tapered structure* must have an "*input end having an elliptical cross section* for coupling with said multimode laser" and an "output end having a circular cross section for coupling with said multimode fiber." The feedthrough device taught by Payne is not a *multimode* tapered structure and does not have an input end having an elliptical cross section *for coupling with a multimode laser.*

Thus, Payne does not disclose or suggest a multimode tapered structure must have an input end having an elliptical cross section for coupling with said multimode laser and an output end having a circular cross section for coupling with said multimode fiber, as required by independent claims 1, 8, 15, and 16.

Additional Cited References

Scifres was also cited by the Examiner for disclosing in Figure 1-4, 8, and 11 a multimode tapered structure (Fig. 2: 17) for coupling a multimode laser (Fig. 2: 11, 45) to a multimode fiber (Fig. 2: 53; Fig. 4: 27, 33).

Appellants note that Scifres is directed to fiber optic waveguides wherein the "input end of the fiber optic waveguides may be squashed into an elongated cross section." See, Abstract. Scifres teaches that the light from a laser is then directed to the fiber optic waveguide *without an intervening structure.* The independent claims of the present invention, alternatively, are directed to a "multimode tapered structure" that couples a "multimode laser to a multimode fiber." As set forth in each of the independent claims, the multimode tapered structure must have an "input end having an elliptical cross section for coupling with said multimode laser" and an "output end having a circular cross section for coupling with said multimode fiber." The structure described in Scifres does not have an output end that couples with a fiber, since the structure is a squashed fiber itself!

With the multimode tapered structure of the present invention, the light passes from the laser through the claimed tapered structure to the fiber optic cable. The multimode tapered structure is not optically equivalent to a fiber optic waveguide that has been squashed. In particular, the fiber optic waveguide of Scifres does not have an "output end having a circular cross section *for coupling with said multimode fiber,*" as required by independent claims 1, 8, 15, and 16.

Conclusion

The rejections of the claims under section §103 in view of Payne and Scifres et al., alone or in any combination, are therefore believed to be improper and should be withdrawn. The remaining rejected dependent claims are believed allowable for at least the reasons identified above with respect to the independent claims.

The attention of the Examiner and the Appeal Board to this matter is appreciated.

Respectfully submitted,

Date: April 21, 2004

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